

Last DSM Input Bit List  
15<sup>th</sup> March 2006

Input Channel	Bit Description
0	CTB Multiplicity Bits 0:15 – Multiplicity
1	VTX Information Bit 0 – BBC TAC difference in window Bit 1 – ZDC TAC difference in window Bit 2 – BBC East small-tile ADC sum over threshold Bit 3 – BBC West small-tile ADC sum over threshold Bit 4 – BBC East large-tile ADC sum over threshold Bit 5 – BBC West large-tile ADC sum over threshold Bit 6 – ZDC East ADC sum over threshold 0 Bit 7 – ZDC West ADC sum over threshold 0 Bit 8 – ZDC East TAC in window Bit 9 – ZDC West TAC in window Bit 10 – MTD trigger bit Bit 11:13 – Unused Bit 14 – ZDC East ADC sum over threshold 1 Bit 15 – ZDC West ADC sum over threshold 1
2	Other CTB Information Bits 0:13 – Unused Bit 14 – Topology flag (i.e. no hits on the top or bottom of the CTB and a few hits representing 2-prong events). The topology flag can be vetoed by the presence of either out-of-time hits or an overflow. The veto configuration is set up using a register in the CB201 DSM. Bit 15 – LED flag
3	EMC Information Bits 0:1 – Barrel JP bits (3 thresholds coded into 2 bits) Bits 2:3 – Barrel HT bits (3 thresholds coded into 2 bits) Bit 4 – Barrel energy sum threshold bit Bit 5 – Barrel J/Ψ topology flag. Bit 6 – Barrel HT.TP threshold bit. Bits 7:8 – Endcap JP bits (3 thresholds coded into 2 bits) Bits 9:10 – Endcap HT bits (3 thresholds coded into 2 bits) Bit 11 – Endcap energy sum threshold bit Bit 12 – Endcap HT.TP threshold bit Bit 13 – Barrel TP threshold bit Bit 14 – Endcap TP threshold bit Bit 15 – Barrel + Endcap total energy sum threshold bit
4	Miscellaneous Information from Scaler Source Patch Panel Bit 0 – Blue bunch filled Bit 1 – Yellow bunch filled Bits 2:15 - Unknown
5	FPD Information Bit 0 – FPD++ S3 > threshold 3 or S4 > threshold 3 Bit 1 – FPD++ S13 > threshold 4 or S24 > threshold 4 Bit 2 – FPD++ S1 > threshold 5 or S2 > threshold 5 Bit 3 – FPD++ S3 > threshold 6 or S4 > threshold 6 Bit 4 – FPD++ S13 > threshold 7 and S24 > threshold 7 and S1234 > threshold 8

	Bit 5 – Any FPD-East module > threshold 1 Bit 6 – Any FPD-East module > threshold 2 Bit 7 – NE > threshold 0 and SE > threshold 0 and NE+SE > threshold 9 Bits 8:15 – Unused
6	Special Trigger Requests Bits 0:2 – selected special trigger request (zero if no request) Bits 3:6 – detector number (0:15) of detector making request Bits 7:13 – Unused Bit 14 – Zero-bias bit Bit 15 – Random bit
7	Unused